

Remarks

The Office Action mailed December 23, 2005 has been carefully reviewed and the foregoing amendment has been made in consequence thereof.

Claims 7, 8, 10-13, and 15-20 are pending in this application. Claims 7-12 stand rejected. Claims 1-6, 9, and 14 are canceled. Claims 13 and 15-20 are allowed.

The objection to the drawings is respectfully traversed. Specifically, Figure 3 has been amended to identify an annular shoulder described in the specification at paragraph [0016], for example, and given reference number 44. Applicants hereby submit a "Replacement Sheet" incorporating the change to Figure 3. No new matter has been added. Accordingly, for at least the reasons set forth above, Applicants respectfully request the objection to the drawings be withdrawn.

The rejection of Claim 7 under 35 U.S.C. §103(a) as being unpatentable over Kraft et al. (U.S. Pat. No. 6,446,439) in view of either Shekleton et al. (U.S. Pat. No. 6,065,281) or Weiler (U.S. Pat. No. 4,229,944) is respectfully traversed.

Kraft et al. describe a fuel nozzle system for use in a combustor for reducing nitrogen oxides and other pollutants. The fuel nozzle system includes an annular fuel distribution manifold (16) that circumscribes a diffusion nozzle (20) such that a plurality of fuel emitting passages or holes (32) are spaced circumferentially about a housing (12) extending to the diffusion nozzle (20). Air flowing downstream along an outer surface of housing (12) is premixed with fuel and ejected under pressure through manifold holes (32) prior to igniting at a diffusion flame downstream from the nozzle (20). The overall fuel system includes a diffusion nozzle fuel supplying tube (39) and an inner swirler (48) that are each surrounded by a tubular housing (170). Tubular housing (170) does not extend around the diffusion nozzle (20) but rather the nozzle (20) appears to extend substantially concentrically outward from the tubular housing (170). Notably, the tubular housing (170) does not include any cooling openings extending therethrough. Kraft et al. also describe a secondary nozzle assembly that does not include a diffusion nozzle (20), but instead includes a premix nozzle that is downstream from the manifold (16). The premix nozzle includes a premix chamber (210) that is surrounded by an annular housing (222). Premix chamber (210) is supported within a housing (222) by a swirl spool (220) and a middle spool (202) which includes a

plurality of fuel passageways (204). Premix chamber (210) is defined within a cylindrical tube (208). A pilot flame nozzle (214) extends substantially concentrically downstream from the cylindrical tube (208). Notably, the cylindrical tube (208) does not include any cooling openings extending therethrough.

Shekleton et al. describe a liquid fuel injector (14) for use in a turbogenerator (12) that includes a recuperator (23). Specifically, a plurality of injectors (14) extend through the recuperator (23) to enable fuel to be injected into a combustor (22). The injectors (14) operate with continuous air assist provided by air assist tubes (18) extending circumferentially about the injectors (14). Liquid fuel injector tubes (16) and the surrounding air assist tubes (18) each include a frusto-conical discharge end (17 and 19, respectively). The air assist pump (38) receives continuous air from the gas turbine compressor (30) that may be cooled by a heat exchanger (40). Notably, Shekleton et al. do not describe nor suggest film cooling of fuel injector tubes (16) or injectors (14). Rather, Shekleton et al. only describe using a heat exchanger (40) to cool the air assist air before it is supplied to the injectors (14).

Weiler describes a fuel injection nozzle assembly (1) for use with gas turbine drives. The nozzle assembly (1) is mounted in a structural part (9) that is formed integrally with an outer housing (4) of a combustion chamber within the gas turbine engine. Nozzle assembly (1) extends into the combustion chamber and includes cooling passages (7 and 8) that extend longitudinally therein. Cooling air discharged from passages (7 and 8) enters an annular channel (3) that extends through the injection nozzle (1). Specifically, the injection nozzle (1) includes a central body (18) having a fuel supply passage therein and an outer shielding member (17) that is positioned such that the channel (3) is defined between the outer shielding member (17) and the central body (18). Cooling air is discharged downstream from the channel (3) past an injection head (19) and through a shielding member (17). Notably, the outer shielding member (17) does not provide film cooling of any component of the fuel injection nozzle assembly.

Claim 7 recites a primer nozzle for a gas turbine engine combustor including a centerline axis, wherein the primer nozzle comprises, among other things, “an injection tip . . . a shroud tip extending around said injection tip . . . said shroud tip comprising a plurality of cooling openings extending therethrough to facilitate film cooling said injection tip.”

None of Kraft et al. nor Shekleton et al. nor Weiler, considered alone or in combination, describe or suggest a primer nozzle for a gas turbine engine combustor as is recited in Claim 7. More specifically, no combination of Kraft et al., Shekleton et al., and Weiler describes or suggests a primer nozzle including a shroud tip extending around an injection tip wherein the shroud tip includes a plurality of cooling openings to facilitate film cooling of said injection tip. Rather, in contrast to the current invention, Kraft et al. describe a fuel nozzle system including a tubular housing that does not include any cooling openings extending therethrough, Shekleton et al. describe a liquid fuel injector that includes a liquid fuel injector tube that does not include any cooling openings to facilitate film cooling, and Weiler describes a shielding wall that does not include any cooling openings that facilitate film cooling.

Accordingly, for at least the reasons set forth above, Claim 7 is submitted to be patentable over Kraft et al. in view of Shekleton et al., or Weiler.

Notwithstanding the above, the rejection of Claim 7 under 35 U.S.C. §103(a) as being unpatentable over Kraft et al. in view of Shekleton et al. or Weiler is further traversed on the grounds that the Section 103 rejection of the presently pending claims is not a proper rejection. Obviousness cannot be established by merely suggesting that it would have been obvious to one of ordinary skill in the art to modify the structure of Kraft et al. by applying the teachings of Shekleton et al. or Weiler. More specifically, as is well established, obviousness cannot be established by combining the teachings of the cited art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination. Rather, the present Section 103 rejection appears to be based on a combination of teachings selected from multiple patents in an attempt to arrive at the claimed invention. Since there is no teaching nor suggestion in the cited art for the claimed combination, the Section 103 rejection appears to be based on a hindsight reconstruction in which isolated disclosures have been picked and chosen in an attempt to deprecate the present invention. Of course, such a combination is impermissible, and for this reason alone, Applicants respectfully request that the Section 103 rejection be withdrawn.

Furthermore, in contrast to the assertion within the Office Action, Applicants respectfully submit that it would not be obvious to one skilled in the art to combine Kraft et al. with Shekleton et al. or Weiler because there is no motivation to combine the references

suggested in the art. Specifically, the Examiner has not pointed to any prior art that teaches or suggests to combine the disclosures, other than Applicants' own teaching.

As the Federal Circuit has recognized, obviousness is not established merely by combining references having different individual elements of pending claims. Ex parte Levengood, 28 U.S.P.Q.2d 1300 (Bd. Pat. App. & Inter. 1993). MPEP 2143.01. Rather, there must be some suggestion, outside of Applicants' disclosure, in the prior art to combine such references, and a reasonable expectation of success must be both found in the prior art, and not based on Applicants' disclosure. In re Vaeck, 20 U.S.P.Q.2d 1436 (Fed. Cir. 1991). In the present case, neither a suggestion or motivation to combine the prior art disclosures, nor any reasonable expectation of success has been shown.

For at least the reasons set forth above, Applicants respectfully request that the 35 U.S.C. §103(a) rejection of Claim 7 be withdrawn.

The rejection of Claims 7, 8 and 10-11 under 35 U.S.C. §103(a) as being unpatentable over Lefebvre (U.S. Pat. No. 3,283,502) in view of Weiler is respectfully traversed.

Weiler is described above. Lefebvre describes a fuel injection system for a gas turbine engine. The system includes an atomizing plate (12) that is located in a duct (7) extending to a combustion chamber (11). The plate (12) directs a stream of combustion gasses over an outer periphery of the plate (12). A pilot fuel injector (10) is mounted in, or near, a mouth of the duct to direct fuel droplets into the combustion chamber. Notably, Lefebvre does not describe nor suggest using film cooling on any component of the fuel injection system.

Claim 7 recites a primer nozzle for a gas turbine engine combustor including a centerline axis, wherein the primer nozzle comprises, among other things, "an injection tip . . . a shroud tip extending around said injection tip . . . said shroud tip comprising a plurality of cooling openings extending therethrough to facilitate film cooling said injection tip."

Neither Lefebvre nor Weiler, considered alone or in combination, describe or suggest a primer nozzle for a gas turbine engine combustor as is recited in Claim 7. More specifically, no combination of Lefebvre and Weiler, describes or suggests a primer nozzle including a shroud tip extending around an injection tip wherein the shroud tip includes a plurality of cooling openings to facilitate film cooling of said injection tip. Rather, in

contrast to the present invention, and as stated by the examiner, Lefebvre does not describe nor suggest using film cooling with the primer nozzle, and Weiler describes a shielding wall that does not include any cooling openings to facilitate film cooling of the injector tip.

Accordingly, for at least the reasons set forth above, Claim 7 is submitted to be patentable over Lefebvre in view of Weiler.

Notwithstanding the above, the rejection of Claim 7 under 35 U.S.C. §103(a) as being unpatentable over Lefebvre in view of Weiler is further traversed on the grounds that the Section 103 rejection of the presently pending claims is not a proper rejection. Obviousness cannot be established by merely suggesting that it would have been obvious to one of ordinary skill in the art to modify the structure of Lefebvre by applying the teachings of Weiler. More specifically, as is well established, obviousness cannot be established by combining the teachings of the cited art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination. Rather, the present Section 103 rejection appears to be based on a combination of teachings selected from multiple patents in an attempt to arrive at the claimed invention. Since there is no teaching nor suggestion in the cited art for the claimed combination, the Section 103 rejection appears to be based on a hindsight reconstruction in which isolated disclosures have been picked and chosen in an attempt to deprecate the present invention. Of course, such a combination is impermissible, and for this reason alone, Applicants respectfully request that the Section 103 rejection be withdrawn.

Furthermore, in contrast to the assertion within the Office Action, Applicants respectfully submit that it would not be obvious to one skilled in the art to combine Lefebvre with Weiler because there is no motivation to combine the references suggested in the art. Specifically, the Examiner has not pointed to any prior art that teaches or suggests to combine the disclosures, other than Applicants' own teaching.

As the Federal Circuit has recognized, obviousness is not established merely by combining references having different individual elements of pending claims. Ex parte Levengood, 28 U.S.P.Q.2d 1300 (Bd. Pat. App. & Inter. 1993). MPEP 2143.01. Rather, there must be some suggestion, outside of Applicants' disclosure, in the prior art to combine such references, and a reasonable expectation of success must be both found in the prior art, and not based on Applicants' disclosure. In re Vaeck, 20 U.S.P.Q.2d 1436 (Fed. Cir. 1991).

In the present case, neither a suggestion or motivation to combine the prior art disclosures, nor any reasonable expectation of success has been shown.

Claims 8 and 10-11 depend directly or indirectly from independent Claim 7. When the recitations of Claims 8 and 10-11 are considered in combination with the recitations of Claim 7, Applicants submit that dependent Claims 8 and 10-11 likewise are patentable over Lefebvre in view of Weiler.

For at least the reasons set forth above, Applicants respectfully request that the 35 U.S.C. §103(a) rejections of Claims 7, 8 and 10-11 be withdrawn.

The rejection of Claims 7, 8 and 10-11 under 35 U.S.C. §103(a) as being unpatentable over Sturgess (U.S. Pat. No. 3,866,413) in view of Weiler is respectfully traversed.

Weiler is described above. Sturgess describes an air blast fuel atomizer (1) for a gas turbine engine wherein fuel is atomized by discharging a swirling film of fuel into a swirling annular air stream of primary air. Primer fuel is atomized in a throat (14) of a venture tube (15) through which an air stream is flowing. Atomized primer fuel and air are discharged from the venture tube (15) into the swirling stream of primary air which is disposed within a swirling film of secondary fuel. Secondary air is introduced through a secondary swirler (31) which is mounted with a shroud (32) concentrically about the prefilmer (19). Notably, Sturgess does not describe nor suggest that the shroud (32) include any cooling openings to facilitate film cooling the prefilmer (19) or the axial tube (12).

Claim 7 recites a primer nozzle for a gas turbine engine combustor including a centerline axis, wherein the primer nozzle comprises, among other things, "an injection tip . . . a shroud tip extending around said injection tip . . . said shroud tip comprising a plurality of cooling openings extending therethrough to facilitate film cooling said injection tip."

Neither Sturgess nor Weiler, considered alone or in combination, describe or suggest a primer nozzle for a gas turbine engine combustor as is recited in Claim 7. More specifically, no combination of Sturgess and Weiler, describes or suggests a primer nozzle including a shroud tip extending around an injection tip wherein the shroud tip includes a plurality of cooling openings to facilitate film cooling of said injection tip. Rather, in contrast to the present invention, Sturgess describes a shroud that does not include either a shroud tip or any cooling openings that facilitate film cooling, and Weiler describes a

shielding wall that also does not include cooling openings that facilitate film cooling of the injector tip.

Accordingly, for at least the reasons set forth above, Claim 7 is submitted to be patentable over Sturgess in view of Weiler.

Notwithstanding the above, the rejection of Claim 7 under 35 U.S.C. §103(a) as being unpatentable over Sturgess in view of Weiler is further traversed on the grounds that the Section 103 rejection of the presently pending claims is not a proper rejection. Obviousness cannot be established by merely suggesting that it would have been obvious to one of ordinary skill in the art to modify the structure of Sturgess by applying the teachings of Weiler. More specifically, as is well established, obviousness cannot be established by combining the teachings of the cited art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination. Rather, the present Section 103 rejection appears to be based on a combination of teachings selected from multiple patents in an attempt to arrive at the claimed invention. Since there is no teaching nor suggestion in the cited art for the claimed combination, the Section 103 rejection appears to be based on a hindsight reconstruction in which isolated disclosures have been picked and chosen in an attempt to deprecate the present invention. Of course, such a combination is impermissible, and for this reason alone, Applicants respectfully request that the Section 103 rejection be withdrawn.

Furthermore, in contrast to the assertion within the Office Action, Applicants respectfully submit that it would not be obvious to one skilled in the art to combine Sturgess with Weiler because there is no motivation to combine the references suggested in the art. Specifically, the Examiner has not pointed to any prior art that teaches or suggests to combine the disclosures, other than Applicants' own teaching.

As the Federal Circuit has recognized, obviousness is not established merely by combining references having different individual elements of pending claims. Ex parte Levengood, 28 U.S.P.Q.2d 1300 (Bd. Pat. App. & Inter. 1993). MPEP 2143.01. Rather, there must be some suggestion, outside of Applicants' disclosure, in the prior art to combine such references, and a reasonable expectation of success must be both found in the prior art, and not based on Applicants' disclosure. In re Vaeck, 20 U.S.P.Q.2d 1436 (Fed. Cir. 1991).

In the present case, neither a suggestion or motivation to combine the prior art disclosures, nor any reasonable expectation of success has been shown.

Claims 8 and 10-11 depend directly or indirectly from independent Claim 7. When the recitations of Claims 8 and 10-11 are considered in combination with the recitations of Claim 7, Applicants submit that dependent Claims 8 and 10-11 likewise are patentable over Sturgess in view of Weiler.

For at least the reasons set forth above, Applicants respectfully request that the 35 U.S.C. §103(a) rejections of Claims 7, 8 and 10-11 be withdrawn.

The rejection of Claim 9 under 35 U.S.C. §103(a) as being unpatentable over either Lefebvre or Sturgess in view of Weiler, and further in view of Stuttaford et al. (U.S. Pat. No. 6,675,581) or Bechtel et al. (U.S. Pat. No. 6,363,724) is respectfully traversed.

Lefebvre, Sturgess, and Weiler are described above. Stuttaford et al. describe a premix fuel nozzle (40) and a method of operation for use in a gas turbine combustor. The premix fuel nozzle (40) utilizes a fin assembly including a plurality of radially extending fins (50) for injection of fuel and pressurized air. Fuel and pressurized air mixes upstream of and flows into a combustion chamber. The premix fuel nozzle (40) includes a plurality of coaxial passages which provide pressurized air to cool the nozzle cap assembly (56). Notably, Stuttaford et al. do not describe nor suggest a shroud tip extending around the nozzle cap assembly (56) and also do not describe nor suggest using film cooling on the nozzle cap assembly (56).

Bechtel et al. describe a diffusion flame nozzle gas tip (20) used to convert a dual fuel nozzle to a gas only nozzle. A nozzle tip (13) diverts compressor discharge air from a passage feeding the diffusion nozzle air swirl vanes (38) to a region vacated by removal of the dual fuel components. This allows diverted compressor discharge air to flow to and through effusion holes (42) in an end cap plate (22) of the nozzle tip (20). Notably, Bechtel et al. do not describe nor suggest a shroud tip extending around the end cap plate (22) and also do not describe nor suggest using film cooling on the end cap plate (22).

Claim 7 is amended to include the recitations of dependent Claim 9. Accordingly, Claim 9 has been canceled. Claim 7 now recites a primer nozzle for a gas turbine engine combustor including a centerline axis, wherein the primer nozzle comprises, among other

things, “an injection tip . . . a shroud tip extending around said injection tip . . . said shroud tip comprising a plurality of cooling openings extending therethrough to facilitate film cooling said injection tip.”

None of Lefebvre, Sturgess, Weiler, Stuttaford et al., or Bechtel et al., considered alone or in combination, describe or suggest a primer nozzle for a gas turbine engine combustor as was recited in Claim 9 and is now recited in Claim 7. More specifically, no combination of Lefebvre, Sturgess, Weiler, Stuttaford et al., and Bechtel et al., describes or suggests a primer nozzle including a shroud tip extending around an injection tip wherein the shroud tip includes a plurality of cooling openings to facilitate film cooling of said injection tip. Rather, in contrast to the present invention, Lefebvre does not describe nor suggest using film cooling with the primer nozzle, Sturgess describes a shroud that does not include either a shroud tip or any cooling openings that facilitate film cooling, Weiler describes a shielding wall that does not include any cooling openings to facilitate film cooling of the injector tip, Stuttaford et al. describe a fuel nozzle wherein compressed air flows through holes in the injector tip for cooling the nozzle cap assembly but Stuttaford et al. do not describe nor suggest a shroud tip extending around the nozzle cap assembly and also do not describe using film cooling on the nozzle cap, and Bechtel et al. describe a fuel nozzle configuration for cooling the end cap plate using compressor discharge air but do not describe nor suggest a shroud tip extending around the end cap plate or using film cooling on the end cap plate.

Accordingly, for at least the reasons stated above, the recitations of Claim 9, now included in Claim 7, are submitted to be patentable over Lefebvre or Sturgess in view of Weiler, Stuttaford et al. or Bechtel et al.

Notwithstanding the above, the rejection of the recitations of Claim 9 under 35 U.S.C. §103(a) as being unpatentable over Lefebvre or Sturgess in view of Weiler, Stuttaford et al. or Bechtel et al. is further traversed on the grounds that the Section 103 rejection of the presently pending claims is not a proper rejection. Obviousness cannot be established by merely suggesting that it would have been obvious to one of ordinary skill in the art to modify the structure of Lefebvre or Sturgess by applying the teachings of Weiler, Stuttaford et al. or Bechtel et al. More specifically, as is well established, obviousness cannot be established by combining the teachings of the cited art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination. Rather, the

present Section 103 rejection appears to be based on a combination of teachings selected from multiple patents in an attempt to arrive at the claimed invention. Since there is no teaching nor suggestion in the cited art for the claimed combination, the Section 103 rejection appears to be based on a hindsight reconstruction in which isolated disclosures have been picked and chosen in an attempt to deprecate the present invention. Of course, such a combination is impermissible, and for this reason alone, Applicants respectfully request that the Section 103 rejection be withdrawn.

Furthermore, in contrast to the assertion within the Office Action, Applicants respectfully submit that it would not be obvious to one skilled in the art to combine Lefebvre or Sturgess with Weiler, Stuttaford et al., or Bechtel et al. because there is no motivation to combine the references suggested in the art. Specifically, the Examiner has not pointed to any prior art that teaches or suggests to combine the disclosures, other than Applicants' own teaching.

As the Federal Circuit has recognized, obviousness is not established merely by combining references having different individual elements of pending claims. Ex parte Levengood, 28 U.S.P.Q.2d 1300 (Bd. Pat. App. & Inter. 1993). MPEP 2143.01. Rather, there must be some suggestion, outside of Applicants' disclosure, in the prior art to combine such references, and a reasonable expectation of success must be both found in the prior art, and not based on Applicants' disclosure. In re Vaeck, 20 U.S.P.Q.2d 1436 (Fed. Cir. 1991). In the present case, neither a suggestion or motivation to combine the prior art disclosures, nor any reasonable expectation of success has been shown.

For at least the reasons set forth above, Applicants respectfully request that the 35 U.S.C. §103(a) rejection of the recitations from Claim 9, that have now been incorporated into Claim 7, be withdrawn.

The rejection of Claims 7, 8 and 10-12 under 35 U.S.C. §103(a) as being unpatentable over either Lefebvre or Sturgess in view of Weiler, and further in view of either Harper et al. (U.S. Pat. No. 4,041,695) or Davies et al. (U.S. Pat. No. 3,344,602) is respectfully traversed.

Lefebvre, Sturgess and Weiler are described above. Harper et al. describe a pneumatic purge system including an accumulator (82) for storing pressurized gas at the maximum pressure developed by a gas turbine engine compressor (14). Upon actuating a

solenoid fuel shutoff valve (36) to initiate engine shutdown, stored gas from an accumulator (82) flows into a fuel manifold (52) and spray nozzles (54 and 70) to purge fuel therefrom into a combustion chamber (18). Notably, Harper et al. do not describe nor suggest film cooling of the spray nozzles (54 and 70). Rather, Harper et al. describe using the stored gas from the accumulator (82) to purge fuel from the fuel manifold (52) and spray nozzles (54 and 70).

Davies et al. describe a fuel purging system for a gas turbine engine. The system includes a reservoir (10) supplied with air from an engine compressor through a non-return valve (12) which closes when the compressor delivery pressure falls below that in the reservoir (10). The reservoir (10) communicates with burners (15 and 16) and fuel lines (18 and 19) through a second non-return valve (22 and 23) which opens when the pressure in the reservoir (10) exceeds that in the fuel lines (18 and 19). Notably, Davies et al. do not describe nor suggest film cooling of the burners (15 and 16). Rather, Davies et al. describe using the air stored in reservoir (10) to expel residual fuel from the branches (20 and 21) and the tubes (18 and 19).

Claim 7 recites a primer nozzle for a gas turbine engine combustor including a centerline axis, wherein the primer nozzle comprises, among other things, “an injection tip . . . a shroud tip extending around said injection tip . . . said shroud tip comprising a plurality of cooling openings extending therethrough to facilitate film cooling said injection tip.”

None of Lefebvre, Sturgess, Weiler, Harper et al., or Davies et al., considered alone or in combination, describe or suggest a primer nozzle for a gas turbine engine combustor as is recited in Claim 7. More specifically, no combination of Lefebvre, Sturgess, Weiler, Harper et al., and Davies et al., describes or suggests a primer nozzle comprising a shroud tip extending around an injection tip wherein the shroud tip comprises a plurality of cooling openings to facilitate film cooling of said injection tip. Rather, in contrast to the present invention, Lefebvre does not describe nor suggest using film cooling with the primer nozzle, Sturgess describes a shroud that does not include either a shroud tip or any cooling openings that facilitate film cooling, Weiler describes a shielding wall that does not include any cooling openings to facilitate film cooling of the injector tip, Harper et al. describe using gas from an accumulator to purge fuel from a fuel manifold and spray nozzles but do not describe nor suggest film cooling of the spray nozzles, and Davies et al. describe using air to expel

residual fuel from the branches and tubes but do not describe nor suggest film cooling of the burners.

Accordingly, for at least the reasons set forth above, Claim 7 is submitted to be patentable over Lefebvre or Sturgess in view of Weiler, Harper et al. or Davies et al.

Notwithstanding the above, the rejection of Claims 7, 8 and 10-12 under 35 U.S.C. §103(a) as being unpatentable over Lefebvre, Sturgess, Weiler, Harper et al. or Davies et al. is further traversed on the grounds that the Section 103 rejection of the presently pending claims is not a proper rejection. Obviousness cannot be established by merely suggesting that it would have been obvious to one of ordinary skill in the art to modify the structure of Lefebvre or Sturgess by applying the teachings of Weiler, Harper et al. or Davies et al. More specifically, as is well established, obviousness cannot be established by combining the teachings of the cited art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination. Rather, the present Section 103 rejection appears to be based on a combination of teachings selected from multiple patents in an attempt to arrive at the claimed invention. Since there is no teaching nor suggestion in the cited art for the claimed combination, the Section 103 rejection appears to be based on a hindsight reconstruction in which isolated disclosures have been picked and chosen in an attempt to deprecate the present invention. Of course, such a combination is impermissible, and for this reason alone, Applicants respectfully request that the Section 103 rejection be withdrawn.

Furthermore, in contrast to the assertion within the Office Action, Applicants respectfully submit that it would not be obvious to one skilled in the art to combine Lefebvre or Sturgess with Weiler, Harper et al., or Davies et al. because there is no motivation to combine the references suggested in the art. Specifically, the Examiner has not pointed to any prior art that teaches or suggests to combine the disclosures, other than Applicants' own teaching.

As the Federal Circuit has recognized, obviousness is not established merely by combining references having different individual elements of pending claims. Ex parte Levengood, 28 U.S.P.Q.2d 1300 (Bd. Pat. App. & Inter. 1993). MPEP 2143.01. Rather, there must be some suggestion, outside of Applicants' disclosure, in the prior art to combine such references, and a reasonable expectation of success must be both found in the prior art, and not based on Applicants' disclosure. In re Vaeck, 20 U.S.P.Q.2d 1436 (Fed. Cir. 1991).

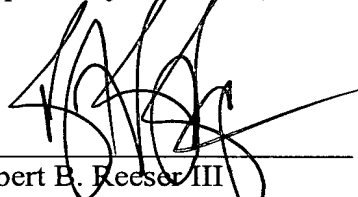
In the present case, neither a suggestion or motivation to combine the prior art disclosures, nor any reasonable expectation of success has been shown.

Claims 8 and 10-12 depend directly from independent Claim 7. When the recitations of Claims 8 and 10-12 are considered in combination with the recitations of Claim 7, Applicants submit that dependent Claims 8 and 10-12 likewise are patentable over Lefebvre or Sturgess, in view of Weiler, Harper et al. or Davies et al.

For at least the reasons set forth above, Applicants respectfully request that the 35 U.S.C. §103(a) rejection of Claims 7, 8 and 10-12 be withdrawn.

In view of the foregoing amendments and remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully submitted,



Robert B. Reesor III
Registration No. 45,548
ARMSTRONG TEASDALE LLP
One Metropolitan Square, Suite 2600
St. Louis, Missouri 63102-2740
(314) 621-5070

IN THE DRAWINGS:

Applicants respectfully request approval of the following drawing change. Specifically, Reference number 44 has been added to Figure 3 to identify an annular shoulder extending radially outward from body 36 as set forth in the Specification, for example, at paragraph [0016]. Applicants hereby submit a "Replacement Sheet" incorporating the change to Figure 3. No new matter has been added.

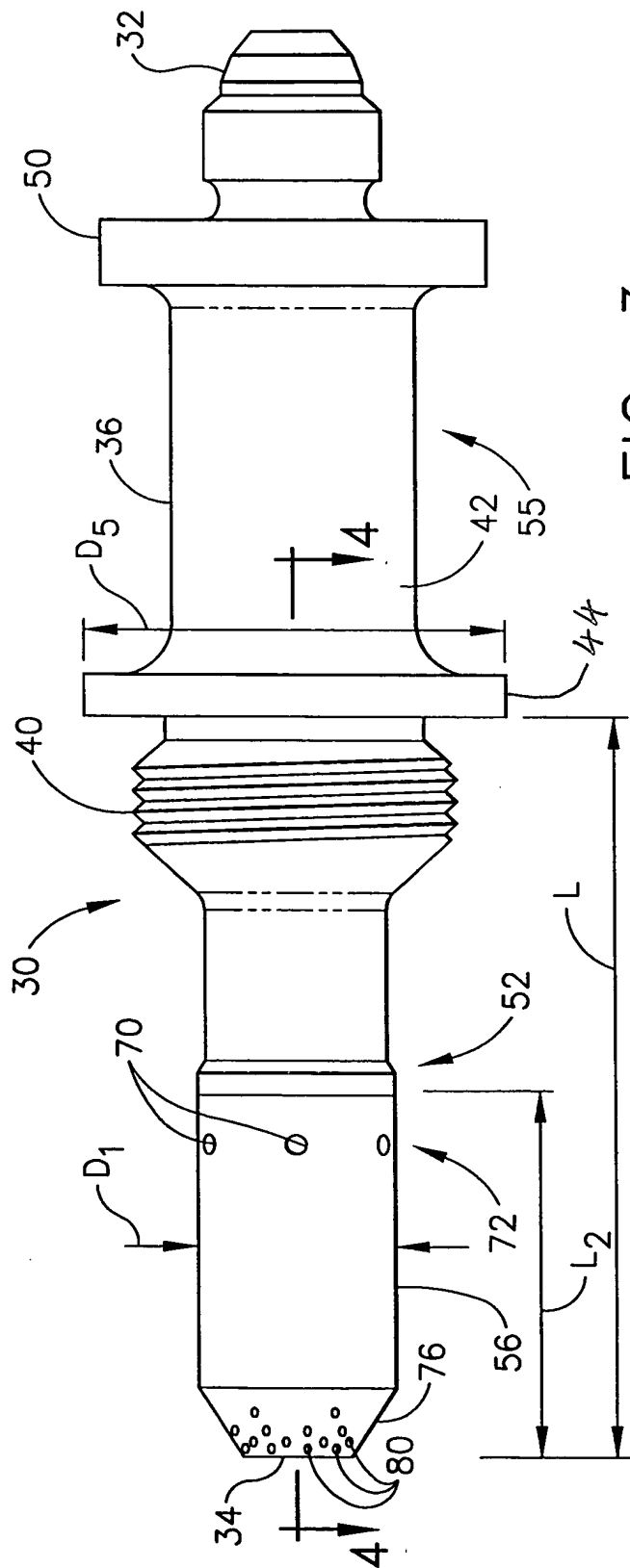


FIG. 3

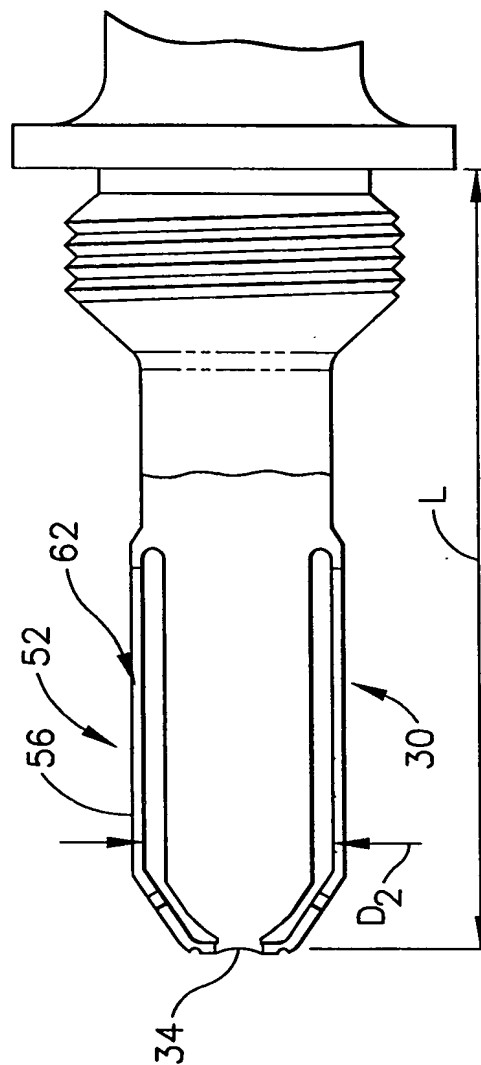


FIG. 4